

## V-119RT 19 STATION ROTARY-TONE INTERCOM

### **GENERAL**

These instructions provide identification, installation, operation, connection and maintenance information for the V-119RT intercom unit.

The V-119RT is a single-path dial select microprocessor controlled intercom unit to be used with 1A2 Key Telephone Systems.

This paging unit has received an FCC type KX registration and is designed to be used with FCC registered key telephone systems. Installations may be made by Valcom, Inc., telephone equipment manufacturers, telephone companies, registered telephone refurbishers, and those qualified for installation of FCC registered systems under FCC Rules Section 68.215.

In accordance with FCC rules with applicable tariffs, this intercom unit may only be installed with the authorization of the owner of the host system.

The FCC Registration Number BAF9I7-69366-KX-N, will be listed in the affidavits filed with the telephone company; it will also be recorded in the system log kept by installation and maintenance personnel. The local telephone company is to be notified of the FCC Registration Number when this intercom unit is installed.

This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been tested and found to comply with the limits for a Class B computing device, in accordance with the specifications in Subpart J of Part 15 of the FCC Rules, which are designed to provide reasonable protection against such interference. If this unit does cause interference to radio and television reception, which can be determined by turning the equipment off and on, the



user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient the receiving antenna.
- Relocate the equipment with respect to the receiver.
- Plug the equipment into a different branch circuit.
- Move the equipment away from the receiver.

### **SPECIFICATIONS**

#### **Purpose**

- To provide 19 stations of intercom signaling to 1A2 key systems.

#### **Applications**

- 1A2 key systems

#### **Features**

- 19 stations or zones
- Dial tone
- Ringback tone
- Last number dialed re-ring (tone only)
- Conference calling on tone dial systems
- Personal signaling (tone only)
- Combined rotary and tone dialing

#### **Capacity**

- The capacity of the V-119RT is 19 stations.
- One talkpath.

## Numbering Plan

- The dialing codes are: 0, 1, 3-9, 20-29.

## Dimensions/Weight

- 7.1" H x 5.9" W x 2.1" D
- (18.03cm H x 14.99cm W x 5.33cm D)
- 3.5 lbs. (1.6 kg)

## Power Requirements

### Voltage Working Limits Current

Talk battery	-21.5 to -26 Vdc	100 mA
Signal battery	-21.5 to -26 Vdc	150 mA
Lamp battery	9V to 11 Vac	45 mA per lamp

## Electrical Characteristics

<u>Parameters</u>	<u>Working Limits</u>
Input Imp. T and R	600 Ohm (incl. inst.)

Signal Contacts	0.5 amps
Signaling Time	1.0 sec.
Dial Pulses	8-12 PPS 60-40 Break ratio +10%
Tone Signals	Industry Standard

### Frequency

Bandwidth	3%
Twist	6db
Detect	40 MS
Interdigital Time	40 MS

### Environmental

Temperature	0/ to 50/ C
Humidity	0/ to 85/ Non-precip.

## INSTALLATION

These instructions cover only the installation procedures for the Valcom V-119RT. Consult the installation instructions for other equipment that may be used.

### Precautions

All precautions have been taken at the factory to insure that the equipment functions properly. To

insure proper operation and to prevent equipment damage, please observe the following:

- Unplug the power supply before making any connections to the control unit.
- Do not locate the control unit closer than 18 inches or farther than 5 feet from the power supply.
- Do not use a lamp tester to check signals, use a voltmeter. A lamp tester when first applied is a short circuit to electronic circuits.
- Do not apply power to the control unit until all connections have been double-checked.

### Mounting

Mount the V-119RT on a 7" KTU mounting, relay rack, or on the wall.

### Connections

1. Fasten a 25 pair female amphenol ended cable to the unit and terminate all leads on a 66 type block.
2. Strap A ground, B ground and lamp ground audible signal ground common at power supply.
3. Refer to Figure 1 for connecting block layout and connections.
4. Refer to Figure 2 for connections to 1A2 Key Systems.

## OPERATION

To place an intercom call, go off-hook and dial tone will be heard. Dial the number of the desired zone or station. Dial tone will be broken after the first number is dialed. A one second ringback tone will indicate that the called station is being signaled.

### Last Number Dialed Re-Ring

To re-ring the same station, press the "\*" button. The station will be signaled as long as the "\*" is pressed.

### Personal Signaling

When initiating a call, press the "\*" and then the station number. A double tone will be sent to the called station.

### Conference Calling

To dial a new number (tone dial only), or to initiate a conference call, press the "#" button. Dial tone will be returned to the calling party. Dial new number.

## **CIRCUIT DESCRIPTION**

This unit provides the common equipment necessary to supply 19 stations of dial select intercom when connected to 1A2 or equivalent telephone systems.

### **Detailed Description**

When a station user lifts handset to make an ICM call, the switchhook contacts in the telephone close the tip and ring to form a loop which returns battery back to turn on a transistor which operates relay and logic circuit to return dial tone and lamp battery to telephone set. The logic circuit receives dialing information and operates relays and circuitry to supply ringing or buzzer voltage to the station selected.

## **TECHNICAL ASSISTANCE**

When trouble is reported, verify that:

- All telephone sets are in proper working order;
- Power is being supplied to the unit;
- There are no broken connections at the connecting block;
- The conductors of color-coded cables are terminated in the proper order.

If trouble still exists, the test equipment listed below shall be required:

- Volt-ohm-multimeter
- Tone-dial single line instrument (for tone-dial systems)
- Telephone test set
- Clip leads

Test lamps must not be used to check voltages. They can damage electronic circuits. When a hand test set is used to check voltages, the results will be misleading.

Before proceeding further, check the voltages at the connecting block. An undetected blown fuse or low voltage will cause improper control operation. DC voltage measurements are made with respect to (+) ground.

If the trouble has not been located, refer to Table 1. This chart identifies symptoms of some possible problems and solutions.

If a spare unit is available, continue to troubleshoot by substituting the spare unit for the specified unit.

If, after all the required tests have been performed, the trouble still exists, assistance in troubleshooting is available from the factory. When calling, you should have a VOM, a telephone test set and several clip leads available and be calling from the job site. Call (540) 427-3900 and ask for Technical Support, or call (540) 427-6000 for Valcom Automated Support or visit our website at <http://www.valcom.com>.

The V-119RT is not field repairable. **Valcom equipment contains no user serviceable parts inside.** Valcom, Inc. maintains service facilities in Roanoke, VA. Should repairs be necessary, attach a tag indicating company name, address, phone number, contact person, and the nature of the problem. Send the unit to:

**Valcom, Inc.  
Repair and Return Dept.  
5614 Hollins Road  
Roanoke, VA 24019-5056**

**TABLE 1  
TROUBLESHOOTING CHART**

PROBLEM	PROBABLE CAUSE AND CORRECTION
No side tone.	Check "A" battery connections, polarity and voltage.
No dial tone.	Check "B" battery connections, polarity and voltage.
No lamps.	Check lamp supply voltage and input. Verify that grounds are common at power supply.
No audible signal at station dialed.	Check signal voltage at supply and frame locations. Verify that grounds are common at power supply.

**VALCOM LIMITED WARRANTY**

Valcom, Inc. warrants its products to be free from defects in materials and workmanship under conditions of normal use and service for a period of one year from the date of shipment. The obligation under this warranty shall be limited to the replacement, repair or refund of any such defective device within the warranty period, provided that:

1. inspection by Valcom, Inc. indicates the validity of the claim,
2. the defect is not the result of damage, misuse, or negligence after the original shipment.
3. the product has not been altered in any way or repaired by others and that factory sealed units are unopened (A service charge plus parts and labor will be applied to units defaced or physically damaged),
4. freight charges for the return of products to Valcom are prepaid,
5. all units 'out of warranty' are subject to a service charge. The service charge will cover minor repairs (Major repairs will be subject to additional charges for parts and labor).

**This warranty is in lieu of and excludes all other warranties, expressed or implied, and in no event shall Valcom, Inc. be liable for any anticipated profits, consequential damages, loss of time or other losses incurred by the buyer in connection with the purchase, operation, or use of the product.**

This warranty specifically excludes damage incurred in shipment. In the event a product is received in damaged condition, the carrier should be notified immediately. Claims for such damage should be filed with the carrier involved in accordance with the F.O.B. point.

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66B350  
SPLIT BLOCK

NOTES:

- 1) AUDIBLE SIGNAL:  
18 Vac BUZZ OR  
105 Vac RING
- 2) POWER SUPPLY:  
A BATT. -24 Vdc  
FILTERED  
B BATT. -24 Vdc  
UNFILTERED
- 3) AUDIBLE GND.,  
LAMP GND., A GND.  
AND B GND. MUST  
BE COMMON AT  
POWER SUPPLY
- 4) FOR TONE DIAL  
OPERATION:  
\*PROVIDES RERING  
# PROVIDES RESET  
FOR CONFERENCE

		A	B	C	D	E	F
ICM KEYS	T	—	26	—	W/BL	—	—
	R	—	1	—	BL/W	—	—
POWER SUPPLY	LB	—	27	—	W/O	—	—
	ICM KEYS	—	2	—	O/W	—	—
PAGE CONTROL	LG	—	28	—	W/GR	—	—
	PC	—	3	—	GR/W	—	—
INTERCOM BELLS OR BUZZERS	RET 0	—	29	—	W/BR	—	—
	STA 0	—	4	—	BR/W	—	—
	RET 1	—	30	—	W/S	—	—
	STA 1	—	5	—	S/W	—	—
	RET 3	—	31	—	R/BL	—	—
	STA 3	—	6	—	BL/R	—	—
	RET 4	—	32	—	R/O	—	—
	STA 4	—	7	—	O/R	—	—
	RET 5	—	33	—	R/G	—	—
	STA 5	—	8	—	G/R	—	—
	RET 6	—	34	—	R/BR	—	—
	STA 6	—	9	—	BR/R	—	—
	RET 7	—	35	—	R/S	—	—
	STA 7	—	10	—	S/R	—	—
	RET 8	—	36	—	BK/BL	—	—
	STA 8	—	11	—	BL/BK	—	—
	RET 9	—	37	—	BK/O	—	—
	STA 9	—	12	—	O/BK	—	—
	RET 20	—	38	—	BK/G	—	—
	STA 20	—	13	—	G/BK	—	—
	RET 21	—	39	—	BK/BR	—	—
	STA 21	—	14	—	BR/BK	—	—
	RET 22	—	40	—	BK/S	—	—
	STA 22	—	15	—	S/BK	—	—
	RET 23	—	41	—	Y/BL	—	—
	STA 23	—	16	—	BL/Y	—	—
	RET 24	—	42	—	Y/O	—	—
	STA 24	—	17	—	O/Y	—	—
RET 25	—	43	—	Y/G	—	—	
STA 25	—	18	—	G/Y	—	—	
RET 26	—	44	—	Y/BR	—	—	
STA 26	—	19	—	BR/Y	—	—	
RET 27	—	45	—	Y/S	—	—	
STA 27	—	20	—	S/Y	—	—	
RET 28	—	46	—	V/BL	—	—	
STA 28	—	21	—	BL/V	—	—	
RET 29	—	47	—	V/O	—	—	
STA 29	—	22	—	O/V	—	—	
POWER SUPPLY	AUD G	—	48	—	V/G	—	—
	AUD S	—	23	—	G/V	—	—
	AG	—	49	—	V/BR	—	—
	AB	—	24	—	BR/V	—	—
	BG	—	50	—	V/S	—	—
	BB	—	25	—	S/V	—	—

FIGURE 1: Connecting Block Arrangement for V-119RT

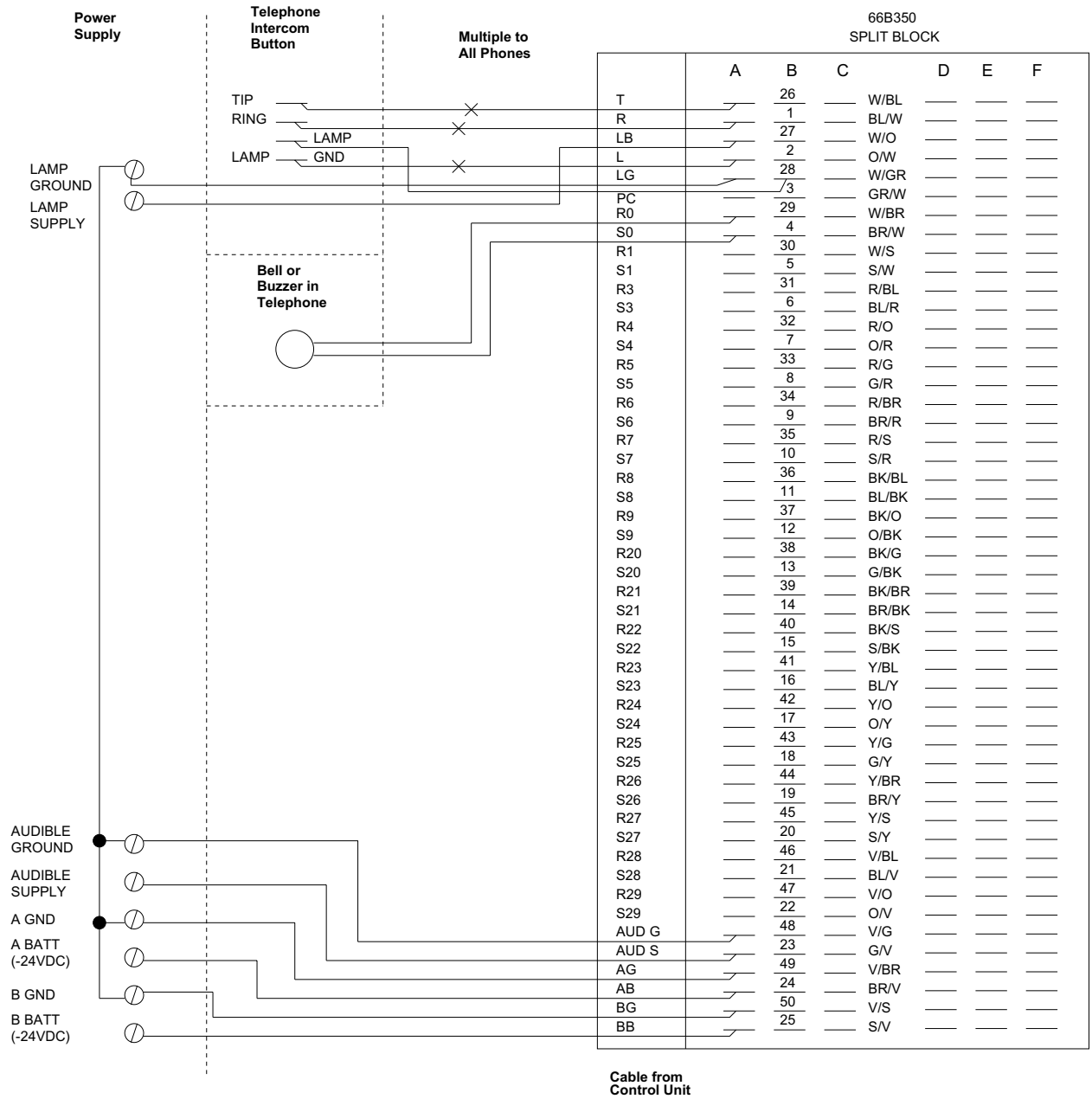
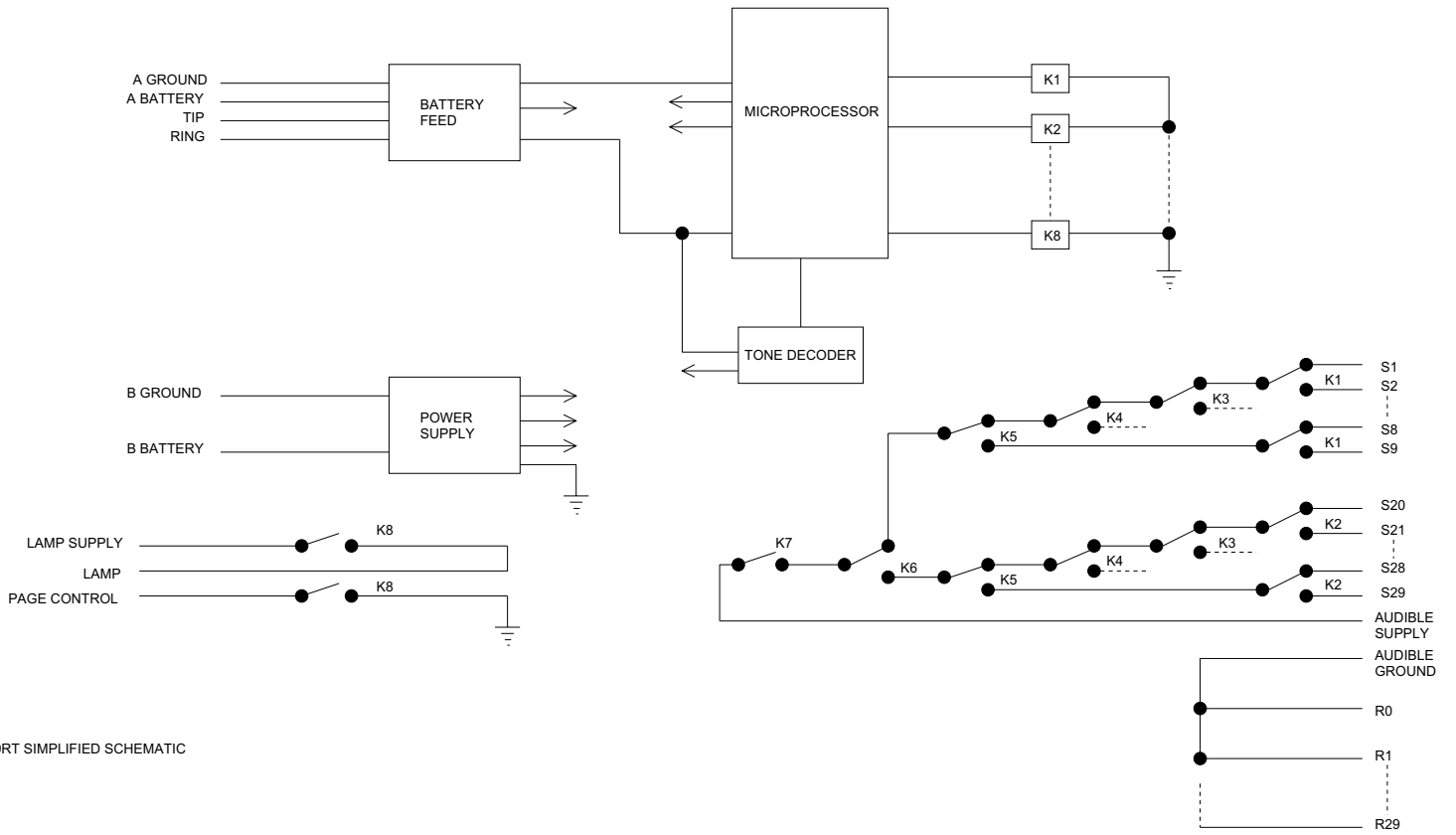


FIGURE 2: Connections to 1A2 Key System



V-119RT SIMPLIFIED SCHEMATIC